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Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.

SECTOR **10** — CHART INFORMATION

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SECTOR 10

IRISH SEA—EASTERN AND NORTHERN SIDES — FORMBY POINT TO MULL OF GALLOWAY

Plan.—This sector describes the E shore of the Irish Sea, from Formby Point in a N and NW direction to Solway Firth and then W to the Mull of **Galloway** (54˚38'N., 4˚51'W.).

General Remarks

10.1 The description in this sector also includes the offshore installations of the South Morecambe and North Morecambe Gas Fields and the ports of Barrow-in-Furness and **Heysham** (54˚02'N., 2˚55'W.).

Caution.—Submarines exercise frequently, both surfaced and dived, in the waters described within this sector.

Numerous wrecks lie in the waters described within this sector and may be seen on the chart.

Oil and gas exploration structures and associated servicing vessels may be encountered within the waters described in this sector.

Offshore trawlers may be encountered in large concentrations up to 35 miles W or SW of Lune Deep lighted buoy (53˚56'N., 3˚11'W.) during April and May; smaller numbers of trawlers may be encountered from August to October. Inshore trawlers may be encountered at any time.

Formby Point to Morecambe Bay

10.2 The estuary of River Ribble is entered between Formby Point and Stanner Point, 11 miles NNE, and is mostly encumbered by drying sandbanks. Southport, a resort, lies 5 miles NE of Formby Point and the coast between is composed of low sandhills fronted by sands which dry out up to 1 mile offshore. Shoal ground, with depths of less than 5.5m, extends up to 5.5 miles W of Formby Point and terminates in a spit, with a least depth of 0.8m, which is marked by a lighted buoy.

A pier on iron piles extends 0.5 mile NW from the coast at Southport and three prominent gas tanks stand 1.7 miles inland, ESE of the pier. The former port of Preston, which was closed to commercial shipping in 1981, lies 11 miles above the entrance of the River Ribble. The coast to the N of the river entrance is low and sandy, but rises at Blackpool, an extensive resort lying 5 miles N of Stanner Point. There are several conspicuous structures at Blackpool, the most noteworthy of which is a 183m high tower that resembles the Eiffel Tower at Paris and may be seen for many miles.

Rossall Point (53˚55'N., 3˚03'W.) lies 5.5 miles N of Blackpool. The coast between is mostly low and sandy, but consists of red-clay cliffs near Blackpool. A conspicuous chimney stands 2.5 miles SSE of the point.

Rossall Oyster Grounds, with depths of less than 5.5m, extend up to 3.5 miles W and 5.5 miles SW from Rossall Point. Several obstructions, with depths of less than 1m, lie on these grounds.

Shell Flat is the W extension of Rossall Oyster Grounds. It has depths of less than 11m and extends up to 11 miles W from the coast.

South Morecambe Gas Field (53˚51'N., 3˚35'W.) is situated about 6.5 miles W of Morecambe lighted buoy. The Central Process Platform (CPP1) stands at the center of the field and connecting pipelines carry gas to it from the surrounding drilling platforms. Accommodation Platform No. 1 (AP1) is situated close W of the CPP1 and Development Platform (DP1) is situated close SSE. A flame tripod structure stands close N of the CPP1. Lighted platforms DP3 and DP4 are situated 2 miles SSE and 2 miles NNE, respectively, of Platform CPP1. Lighted platforms DP6 and DP8 are situated 1.7 miles NW and 3 miles NNW, respectively, of Platform CPP1.

North Morecambe Gas Field (53˚57'N., 3˚40'W.) lies NNW of South Morecambe Gas Field and in 1993 consisted of a single lighted offshore production platform (11012A-DPPA), containing a flare boom. A gas trunkline, with an adjoining submarine pipeline and power cable, extends ENE from the offshore platform to the shore; the landing place lies 2.5 miles NW of Walney Light.

A gas pipeline, which links all the platforms, extends NE from Platform CPP1 to a point on the shore 2 miles NW of Walney Light (54˚03'N., 3˚11'W.); the landing place of the pipeline is marked by a beacon. Submarine power cables link all the development platforms with Platform CPP1.

Vessels, underwater craft, and divers may be working within the adjacent Development Area. Mobile rigs may also be encountered. Well 11013B-4, with a least depth 12.8m, lies outside this area. It is situated 5 miles NE of the CPP1 and is marked by a lighted buoy; Wells 11012A-7 and 11012A-8 are situated 5.3 and 6.5 miles NNW, respectively, of the CPP1 and each is marked by a lighted buoy.

Directions.—From the vicinity of Bar Light-float (53˚32'N., 3˚21'W.), a coastal route leads about 23 miles N to a position W of Rossall Point and seaward of Shell Flat (53˚51'N., 3˚20'W.). This route is clear apart from a number of wrecks which lie in the approaches to the light-float.

From the vicinity of Bar Light-float, the route leads to Morecambe Bay and passes W of Jordan's Spit (53˚34'N., 3˚15'W.), an extension of shoal ground which lies W of Formby Spit and has depths of less than 3m. An area of spoil ground, marked by a lighted buoy, lies off the W edge of Jordan's Spit. An obstruction, the remains of Formby Towers, lies at the NE tip of the spit and is marked by a lighted buoy. The route then passes clear of a wreck (53˚37.5'N., 3˚23.5'W.) and E of South Morecambe Gas Field (53˚51'N., 3˚35'W.). It leads W of Shell Flat which extends 11 miles W from the coast. This flat has depths of less than 10m and is the tongue like extension of Rossall Oyster Grounds. The route then passes W of Morecambe lighted buoy (53˚52'N., 3˚24'W.)

which is moored off the NW edge of Shell Flat. A wellhead, marked by a lighted buoy, lies 2 miles WNW.

Vessels of suitable draft bound for Lune Deep can take an inside route over Shell Flat in depths of not less than 6m. After passing W of Jordan's Spit lighted buoy, the route leads about 20 miles NNE.

The line of bearing, 009˚, of the tower of Saint Michaels Church (54˚06'N., 3˚10'W.) open W of Walney Light passes over Shell Flat and W of Rossall Patches.

Morecambe Bay

10.3 Morecambe Bay is an extensive inlet entered between Rossall Point and Isle of Walney, about 9 miles NW. It is nearly filled with drying flats, but is penetrated in its S part by a trough, known as Lune Deep, which furnishes access to several ports on its SE shore, namely Fleetwood, Lancaster, and Heysham. At the N side of the entrance to the bay, a narrow channel leads to Piel Harbor at the head of which are the docks of Barrow-In-Furness.

The low-lying Isle of Walney, which lies on the N side of the entrance to the bay, is about 7 miles long. Foul ground extends up to 1 mile off the W coast of the isle and a main light is shown from a prominent tower standing at the SE end. A radiobeacon is situated at the light. The isle protects the port and inner approaches of Barrow from seaward.

Tides—Currents.—The tidal currents in the bay follow the deep-water channels at LW, but when the banks are covered they flow directly in and out of the bay. The maximum velocity of the current is 4 knots at springs.

Aspect.—Lune Deep, a deep channel, has depths of up to 47m and penetrates the SE part of Morecambe Bay. The shoals that border Lune Deep are steep-to and dangerous. On the S side are Northwest Boulders which lie on Rossall Oyster Grounds and have patches with depths of less than 1.8m; King Scar which dries 4.9m and is part of the extensive shoal known as North Wharf; and Bernard Wharf, an extensive shoal that dries up to 3.9m in places.

On the N side are the extensive Morecambe Flats, on the SE edge of which lie Danger Patch, a rock with a depth of 1.5m, and Fisher Bank Spit, with depths of less than 0.9m.

Lune Deep lighted buoy, equipped with a racon, is moored about 5 miles W of Rossall Point and marks the approach to the channel.

A narrow approach channel leads into the NW side of the bay. It passes between the shoals extending from the S side of Isle of Walney and Mort Flats which dry in places and occupy the NW part of the bay. A lighted buoy, moored about 3.7 miles SW of Walney Light, marks the approach to the entrance channel. The fairway of this channel is indicated by ranges and marked by lighted buoys.

Fleetwood (53˚55'N., 3˚01'W.)

World Port Index No. 34660

10.4 Fleetwood harbor, at the mouth of the River Wyre, is entered through a narrow channel that cuts through the drying flats on the SE side of Lune Deep. The harbor consists of the section of the river abreast the town and two wet docks lying on the S side of the town. The port is used by an extensive fishing fleet. There are terminals for ro-ro and ferry vessels which operate to and from the Republic of Ireland, Northern Ireland, and the Isle of Man. There are also facilities for vessels which service the oil and gas exploration structures.

Tides—Currents.—Tides rise about 9.2m at springs and 7.3m at neaps.

In the entrance, the currents follow the channel when the banks on either side are exposed, but flow across the channel when the banks are covered. It is therefore necessary for vessels to guard against the cross-current.

Depths—Limitations.—Depths within the harbor and approach channel are subject to frequent change. Continuous dredging is carried out. It was reported (1987) that a dredged depth of 2.5m was being maintained in the channel over the bar.

A ferry berth, 91m long, is situated adjacent to the town. It is dredged to a depth of 4.5m and can accommodate vessels up to 107m in length with drafts up to 4.2m.

A ro-ro berth is situated close S of the ferry berth. It is dredged to a depth of 4.5m and can accommodate vessels up to 152m in length with drafts up to 4.2m.

The channel, which leads to the wet docks, is dredged to a drying height of 2m. The docks are entered through a lock, 76m long and 15.2m wide. They consist of Wyre Dock, 305m long and 122m wide, and a fish dock which is connected by a passage, 15.2m wide. The wet docks are normally maintained at a depth of 6.4m, but are reduced to a depth of 5.5m during some neap periods. Vessels of up to 105m in length and 14.2m beam can enter the wet docks.

Aspect.—A fairway lighted buoy is moored at the entrance to the approach channel, about 2.5 miles NNE of Rossall Point. The channel is indicated by a range and marked by buoys, beacons, and lighted buoys. A prominent disused light structure stands on piles at the W side of the entrance to the approach channel. The chimney and cooling towers of a power station, which is situated close SE of the wet docks, are conspicuous, but are reported to be due for demolition.

Pilotage.—Pilotage is compulsory for vessels of 50 grt and over with certain exceptions. Vessels should send an ETA 24 hours in advance with amendments up to 12 hours before the original ETA. Pilots board from a boat, which cruises only when a vessel is expected, in the vicinity of the River Wyre Fairway lighted buoy. Pilots can be contacted by VHF.

Anchorage.—Vessels waiting to enter the port may anchor about 0.5 mile NW of the fairway lighted buoy, in a depth of 24m.

Caution.—Local knowledge is required. The most dangerous winds at Wyre Bar are those from between the NW and NE.

A ferry crosses the channel at the harbor entrance.

A speed limit of 5 knots should be maintained within the port.

10.5 **Lancaster** (54˚01'N., 2˚50'W.) is a small port lying on the River Lune. It consists of Glasson Dock, 2 miles within the mouth of the river, and a river quay, 7 miles above the

mouth. An approach channel connects Lune Deep with the river and leads between extensive areas of foul ground. It is entered about 1.5 miles NE of the Fleetwood approach channel.

Tides—Currents.—Tides at Glasson Dock rise about 6.6m at springs and 4.4m at neaps. At Lancaster, the tides rise about 4.3m at springs and 2.5m at neaps.

Depths—Limitations.—Glasson Dock, a wet dock, lies on the S side of the river and is entered through a gate, 15m wide. The dock is 156m long and 61m wide. It is maintained at a depth of 5.5m at MHWS and 3.5m at MHWN. The dock can accommodate vessels of up to 85m in length, 14m beam, and 4.6 draft at HWS.

A basin is connected to the dock by a lock which is 30.5m long and 7.6m wide. The basin has a depth of 4.3m and is used as a marina. A canal, which is used by pleasure craft only, leads into this basin.

There are two river-side wharves, North Wall and East Wall, which can accommodate vessels of up to 3,000 dwt, 90m in length, and 14m beam. Two quays, situated at Lancaster, provide a berth, 146m long. Vessels of up to 3.8m draft can be accommodated alongside at MHWS, but take the ground at LW. The maximum size of vessels handled at the port at HW is 25,000 dwt, 160m in length, 26m beam, and 9m draft.

Aspect.—Conspicuous silos stand close S of the dock and a castle, a cathedral, a chimney, and a gas tank are prominent in the town. The entrance to the approach channel is marked by a lighted buoy and indicated by a range. The fairway is marked by lighted buoys.

Pilotage.—Local knowledge is essential and a pilot should be employed. An ETA should be sent 24 hours in advance. Pilots will board in the vicinity of the approach channel fairway lighted buoy and may be contacted by VHF.

Caution.—The positions of the buoys are subject to change.

Overhead power cables, with a vertical clearance of 29m, span the river about 1.5 miles above Glasson Dock.

10.6 Heysham (54˚02'N., 2˚55'W.) (World Port Index No. 34640) consists of an artificial harbor basin and is situated 4 miles NNE of the entrance to Lancaster approach channel. The port has facilities for ro-ro and container vessels. A ferry service runs to the Isle of Man and a terminal for vessels servicing the gas fields is situated in the harbor.

Tides—Currents.—Tides rise about 9.4m at springs and 7.4m at neaps.

The tidal current in Heysham Lake sets NE from 5 hours before until 1 hour after HW at Liverpool and has a maximum velocity of 3 to 4 knots at springs. During the remaining hours, it sets SW at about the same velocity.

Depths—Limitations.—Heysham Lake, with a width of about 0.3 mile between the limiting shoals, extends NE from the inner end of Lune Deep and provides an approach channel to the harbor. The fairway has charted depths of over 5m. An entrance channel, with a least charted depth of 3.2m, leads to the harbor entrance which is 91m wide and protected on the S side by a breakwater. A dredged depth of 4.1m is generally maintained in the harbor basin which is accessible at all stages of the tide. Vessels of up to 10,000 tons, 150m in length, and 5.1m draft can be accommodated.

Aspect.—An oil refinery stands 1 mile SE of the harbor basin. A prominent nuclear power station stands close SE of the harbor entrance. The approach channel is marked by lighted buoys and the entrance to the harbor is indicated by a range.

Pilotage.—Pilotage is compulsory for vessels of 50m and over with certain exceptions. An ETA should be sent 24 hours in advance. The pilot boards near the Lune Deep lighted buoy and can be contacted by VHF.

Caution.—The depths in the harbor are maintained by dredging but are liable to change.

Hauling-off wires lie on the seabed in the E part of the harbor.

An obstruction, marked by a lighted beacon and a lighted buoy, lies in the channel, about 0.5 mile N of the harbor entrance.

Barrow-In-Furness (54˚06'N., 3˚14'W.)

World Port Index No. 34630

10.7 Barrow-in-Furness (Barrow) lies on the NW side of Morecambe Bay and is protected from seaward by the Isle of Walney. The port specializes in exporting limestone, spent nuclear fuels, and gas condensates. In addition, a large section of the port has facilities for ship building.

Winds—Weather.—Winds from the SW and W are the most dangerous and cause considerable seas in the entrance channel. When very strong, they may increase the depth in the channel; strong winds from the E have the opposite effect.

Tides—Currents.—Tides rise about 9.1m at springs and 7.1m at neaps.

At Lightning Knoll lighted buoy, which is moored at the entrance to the channel, the currents are rotary and have little velocity. The greatest strength is at 2 hours after HW at Liverpool, when the current runs at 1.5 to 2.5 knots and sets between WNW and W, and at half flood, when the current runs at 1 to 2 knots and sets between ESE and E. Strong SW and W gales increase the strength of the currents in Walney Channel; strong winds from the E have the opposite effect.

Depths—Limitations.—The port is approached through a very narrow channel lying close S of the S end of the Isle of Walney. Ramsden Dock Basin lies on the E side of the entrance channel and is entered through a gate, 30.5m wide, which has depths on the sill of 9.4m at MHWS and 7.4m at MHWN.

Ramsden Dock is entered from the basin through a lock, 213m long and 30.5m wide. The dock is 895m long and 196m wide and structures for the offshore gas and oil industries are constructed in its S part.

Buccleuch Dock, which is 0.5 mile long and 150m wide, is entered from Ramsden Dock through a passage, 30.5m wide. A fitting-out berth lies on the S side of this dock.

Devonshire Dock is entered from Buccleuch Dock through a passage which is 24.4m wide and has a depth of 8.5m over the sill. A shipyard stands on reclaimed land which was formerly the W part of the dock. A bridge spans the connecting passage.

Vessels of up to 200m length, 29m beam, and 7.5m draft can be accommodated within these wet docks.

There are two tidal berths on the E side of the channel, close N of the entrance to the wet docks. Belfast Berth is 186m long and has a charted depth alongside of 2m. Deepwater Berth is 259m long and has a charted depth alongside of 10m.

Aspect.—Jubilee Bridge crosses the channel about 1 mile above the entrance to Ramsden Dock Basin. The clusters of large cranes standing in the vicinity of the shipyard are prominent.

Pilotage.—Pilotage is compulsory for vessels of over 50m in length and all vessels carrying dangerous substances. Pilots may be contacted on VHF channel 12 and board close SW of Lightning Knoll Lighted Buoy. The ETA at the pilot boarding position should be sent at least 24 hours in advance.

Caution.—Dredging is generally in progress within the channel between Piel Harbor and the docks.

Navigational lights may be difficult to distinguish because of the glare from the iron works situated in the vicinity of Barrow-in-Furness which may sometimes be seen at a distance of up to 15 miles.

Morecambe Bay to Solway Firth

10.8 Between the S extremity of the Isle of Walney and Solway Firth, 32 miles NNW, the coast is free of dangers up to over 2 miles offshore. There are breaks in this section of coast at the mouth of the River Duddon and at Ravenglass Harbor where small coasters can enter at HW.

Cockspec Scar and two other patches, the shoalest of which dries, lie nearly 2 miles off the middle of the Isle of Walney.

The River Duddon discharges through the drying flats N of the Isle of Walney. The channel has a depth of 1.8m at the entrance, but dries farther in. The drying shoals at the mouth of the river project about 2 miles beyond the general line of the coast and vessels should keep in depths of not less than 15m.

Black Combe (54˚15'N., 3˚20'W.), a dark hill with an unbroken rounded outline, rises 4.5 miles N of the River Duddon, 2 miles from the shore.

Selker Rocks (54˚17'N., 3˚27'W.), some of which dry, extend up to 1.7 miles off the coast, 7.5 miles NNW of the River Duddon. Scala Fold, Style Rock, Black Leg Rock, and several other dangers extend up to 1.5 miles off the shore for up to 3 miles S of Selker Rocks.

Vessels in this vicinity should keep in depths of not less than 18m. Selker lighted buoy is moored about 1.7 miles SW of Selker Rocks.

Ravenglass (54˚21'N., 3˚24'W.) is a small harbor formed by the drying estuary of three rivers. It dries and is used by yachts and pleasure craft. The harbor should not be entered without local knowledge and is reported to be difficult to identify from seaward. Newton Knott, a long and slopping hill, lies SE of Ravenglass and is a good landmark.

Drigg Rock lies about 1 mile offshore close N of the entrance to Ravenglass and has a depth of less than 1.8m. Several ledges lie on the drying sands that border the shore to the N of this rock. With these exceptions, the coast as far N as St. Bees Head is free of dangers. A railroad skirts this section of the coast and mountains may be seen in the background.

Photograph Courtesy of Jurgen Tronicke

St. Bees

Calder Hall power station, with several conspicuous cooling towers, stands near the coast, 5 miles NNW of Ravenglass. Outfall pipelines extend seaward from the power station and are marked by buoys.

St. Bees Head (54˚31'N., 3˚38'W.), a conspicuous headland, is located 12.5 miles NW of Ravenglass. A perpendicular cliff of red sandstone, 94m high, is located on its seaward face and a flat summit stands close inland. A main light is shown from a prominent tower standing on this headland.

Several wrecks lie in the vicinity of the headland and may best be seen on the chart.

Directions.—From a position WNW of Morecambe lighted buoy (53˚52'N., 3˚24'W.), a route leads about 40 miles NNW to a position W of St. Bees Head. It passes ENE of a submerged wellhead (53˚53'N., 3˚27'W.) then clear of a wreck, with a least depth of 9.1m, which lies 2.5 miles N of the wellhead. The route then leads WSW of **Cockspec** (54˚06'N., 3˚18'W.), a rocky ground with detached seaweed covered drying patches, ENE of an ODAS buoy (54˚08'N., 3˚37'W.) WSW of **Haverigg Point** (54˚11'N., 3˚19'W.), WSW of **Black Leg Rock** (54˚14'N., 3˚24'W.), and WSW of Selker lighted buoy. It then continues WSW of the entrance to Ravenglass Harbor, WSW of **Drigg Rock** (54˚20'N., 3˚28'W.), WSW of two outfall buoys, and WSW of South Head, the S extremity of the promontory forming St. Bees Head.

Solway Firth

10.9 Solway Firth, an extensive inlet, is mostly encumbered by shifting sandbanks which are subject to frequent changes. It is entered between St. Bees Head and Abbey Head, 19 miles NW. The best navigable channel is English Channel which lies near the SE shore and has the only fairway that is marked by buoys. This channel provides access to several small ports along the English shore including Whitehaven, Workington, Maryport, and Silloth.

The chart should not be considered a safe guide for the navigation of the firth as the changes in the depths are very rapid. Local knowledge is essential for vessels navigating the firth, except, perhaps, English Channel as far as Maryport Roads. No vessel should attempt to enter the firth in reduced visibility without first having ascertained an accurate position.

Workington Bank, with a least depth of 5.2m, lies in the entrance, 8 miles N of St. Bees Head and is marked by lighted

buoys. Three Fathoms Bank, with a least depth of 2.8m, lies about 1.5 miles NW of Workington Bank. Two Feet Bank, with a least depth of 1.8m, lies 1 mile N of Three Fathoms Bank. A large mass of drying sandbanks extends N from Two Feet Bank to within a short distance of the N shore of the firth.

English Channel, the main fairway, is entered about 5.5 miles N of St. Bees Head and leads between the shoals extending from the coast and Workington Bank. This fairway has a least depth of 10.9m for 9 miles then it shoals quickly to a depth of 5.5m and finally decreases to depths of less than 2.5m.

Numerous disused iron foundries, with prominent chimneys, are situated along the coast between St. Bees Head and Workington, 8 miles N. Bengairn, 386m in elevation, and Criffel, 565m in elevation, are two conspicuous mountains standing 6 miles NNE and 15 miles NE, respectively, of Abbey Head.

Tides—Currents.—The tidal current approaching Solway Firth passes inward through the channel between the N point of the Isle of Man and Burrow Head. At springs, the ingoing current, at a position 5 miles N of the Isle of Man, sets E at a rate of 2.7 knots at springs. Half way between the Isle of Man and Burrow Head, the current sets ENE at a rate of 2.5 knots. At a position 5 miles S of Burrow Head, it sets NE at a rate of 3.5 knots. The corresponding outgoing directions and rates are W at 3 knots; WSW at 3.2 knots; and SW at 3.5 knots.

The principal tidal flow in and out of Solway Firth is through Middle Channel. The currents have their greatest velocity towards the NW or Scottish shore.

Pilotage.—Pilotage is compulsory, with certain exceptions, for Whitehaven, Workington, Silloth, and Annan. Vessels bound for these ports should notify their agents 12 hours in advance of their ETA so that the pilot boat may be on station when required. Amendments should be sent up to 4 hours before the time of the original ETA. Pilots generally board vessels bound for Whitehaven off that port. Pilots board vessels bound for Workington, Silloth, and Annan off Workington. Pilots can be contacted by VHF from 2 hours 30 minutes before to 1 hour 30 minutes after HW.

Caution.—Winds from the SW cause the highest sea in the firth. Heavy seas exist with winds from between SW and NW, but decrease within Workington Bank.

A magnetic anomaly exists within English Channel due to slag having been washed into the water.

Whitehaven (54˚33'N., 3˚36'W.)

World Port Index No. 34620

10.10 Whitehaven, an artificial harbor, is protected by breakwaters and divided by spurs into several sections which dry at LW. In addition, there is a wet basin.

Depths—Limitations.—Queens Dock has a depth of 4.2m, maintained by gates at its entrance. This gateway is 13.7m wide and has a depth on the sill of 6.7m at HWS. In the tidal section of the harbor, there are depths of 4.2 to 6.4m at HWS. The channel, which leads through the harbor to Queens Dock, is maintained by dredging to a depth of 7.6m. Vessels of up to 82m in length and 12.2m beam have entered the harbor. It was reported (1982) that due to silting, only small vessels up to 1,500 tons could enter. Cargo can be unloaded into barges from large vessels anchored offshore.

Tides—Currents.—Tides rise about 8m at MHWS and 6.3m at MHWN.

Pilotage.—See Solway Firth.

Anchorage.—Temporary anchorage can be taken in depths of 9 to 11m, sand, about 0.5 mile off the harbor entrance.

Caution.—During W gales, a heavy sea may be encountered across the harbor entrance.

Workington (54˚39'N., 3˚34'W.)

World Port Index No. 34610

10.11 Workington is formed within breakwaters at the mouth of the small River Derwent on the E side of the entrance to English Channel. It consists of a tidal harbor and a wet dock, known as Prince of Wales Dock. The harbor is used principally for the import of chemicals and has a molten sulfur terminal.

Tides—Currents.—Tides rise about 8.2m at MHWS and 6.4m at MHWN.

Depths—Limitations.—The entrance channel is maintained by dredging, but silts rapidly. There is usually only a dredged depth of 0.3m on the bar at the entrance. The Prince of Wales Dock is entered through a gate, 21.3m wide, which has depths over the sill of 9.3m at springs and 7.6m at neaps. Depths of 7.2 to 10m are maintained in the dock depending upon the tides. Vessels of up to 137m in length, 20m beam, and 7.9m draft can be accommodated.

The entrance to the tidal harbor is crossed by a railroad bridge which also crosses the river entrance. The passage into the harbor is 15m wide and the vertical clearance below the bridge is 1.8m. The tidal harbor is only used by small craft and fishing vessels.

Pilotage.—See Solway Firth.

10.12 Harrington (54˚37'N., 3˚34'W.), lying 2 miles S of Workington, is a small harbor which dries at LW. The port is no longer open to commercial vessels and is used by only yachts and fishing craft.

Maryport (54˚43'N., 3˚30'W.), lying 4.7 miles NNE of Workington, is a small harbor located at the mouth of the River Ellen. The port is mostly silted up and no longer used by commercial vessels. It is used by only yachts and fishing craft.

Anchorage.—Maryport Roads lie abreast of the harbor at Maryport and near the head of English Channel. This roadstead provides anchorage that is sheltered from all but W winds. The inner part has depths of 6 to 7m, shell and shingle. Anchorage can be taken in the outer part in a depth of 12m, sand, about 2.7 miles of NW of South Pier.

10.13 Silloth (54˚52'N., 3˚24'W.) (World Port Index No. 34590) lies on the S side of Solway Firth, 10 miles NE of Maryport. The harbor consists of a tidal basin and a wet dock.

Tides—Currents.—Tides rise about 9.2m at MHWS and 7.1m at MHWN.

Depths—Limitations.—The firth above Maryport is shallow and obstructed by shifting banks. The channel is marked by buoys, but local knowledge is essential. The tidal dock is entered through a passage, 30m wide. The wet dock is entered from the tidal dock through a gateway, 17.4m wide, which has depths over the sill of 7.6m at springs and 5.2m at neaps. Vessels of up to 3,000 dwt, 90m in length, 15m beam, and 6m draft can be accommodated.

Pilotage.—See Solway Firth.

Anchorage.—Vessels may take temporary anchorage, in depths of 7 to 11m, within the NE part of the channel leading to Silloth.

Annan (54˚58'N., 3˚16'W.) is a very small port lying on the N shore of Solway Firth at the mouth of the River Annan. The upper part of the firth is encumbered by shifting and drying sandbanks interspersed with shallow channels. Buoyage is moved as required to meet the changes. Navigation should not be attempted without a pilot or local knowledge.

A well marked shallow channel leads from Silloth to Annan and is suitable for vessels with local knowledge. Two quays are situated in the harbor and are generally used by fishing vessels.

Solway Firth to Mull of Galloway

10.14 Abbey Head (54˚46'N., 3˚58'W.), located on the NW side of the entrance to Solway Firth, is a bold and rocky headland. A dangerous wreck lies about 1.2 miles SSW of the head. Gipsy Point is located 3 miles W of the head and the coast between is bold, rocky, and steep-to.

Kirkcudbright Bay (54˚46'N., 4˚04'W.) is entered between Gipsy Point and Little Ross Island, 1.5 miles W. It has depths of 5 to 9m in the entrance and the approach is free from dangers with the exception of a detached 3.9m patch which lies about 0.2 mile W of Gipsy Point. Little Ross Island is separated from the mainland by a narrow passage. A light is shown from a prominent structure, 20m high, standing on the E side of this island.

The River Dee flows into the head of the bay and connects with a narrow channel with a least charted depth of 0.3m over the bar. This channel passes through the drying sandbanks in the N part of the bay. A wharf, which dries at LW, is situated on the river side about 4.5 miles N of the bay entrance. It has a depth alongside of 5.2m at MHWS. Vessels of up to 2,000 dwt, 74m in length, and 5m draft can be handled at HWS. Pilotage is not compulsory, but advisable. Pilots are available and an ETA must be sent 24 hours in advance. The port may be contacted by VHF.

Buoys marking the channel are moved without notice to conform with changes in the drying banks.

Vessels can anchor in the outer part of the bay in depths of 5.5m, good holding ground. This anchorage is sheltered from all winds except those from the S and SE.

Wigtown Bay (54˚45'N., 4˚15'W.) is entered between a point on the mainland, lying close W of Little Ross Island, and Burrow Head, 11.5 miles SW. The NW and NE portions of the bay are occupied by extensive drying sands. The entrance has depths of 18 to 34m which decrease regularly towards the head. Several anchorages lying near the shores of the bay provide shelter from offshore winds. The bay is open to the S and S winds, which are very prevalent and often give little warning, send in a heavy sea. Vessels without local knowledge should not attempt to navigate the inner and shallow sections of this bay. The River Cree discharges into the head of Wigtown Bay through a buoyed channel which leads across the drying sands along the N shore. Creetown and Carty Quay, 2.5 miles farther up the river, can be reached at HWS by vessels with drafts up to 3.6m. Local knowledge is essential.

Garlieston is a small tidal harbor lying on the W side of the bay, 6.5 miles N of Burrow Head. There are two berths which dry at LW and can accommodate vessels of up to 1,000 dwt.

Several dangerous wrecks lie in the approaches to the harbor and may be seen on the chart.

Isle of Whithorn (54˚42'N., 4˚22'W.), a small peninsula, lies 1.7 miles NE of Burrow Head. A conspicuous white tower stands near the SE end of this isle. A small harbor, which is used by pleasure craft and fishing boats, lies within a bay on the S side of the peninsula.

Small vessels may anchor, in depths of 5 to 7m, sand, within the bay, but S winds drive in a heavy sea.

Burrow Head (54˚40'N., 4˚24'W.) is formed by a conspicuous cliff with deep water lying close offshore. A water tower and a radio mast stand 0.5 mile and 1.5 miles NW, respectively, of the head and are conspicuous from seaward.

10.15 Luce Bay (54˚45'N., 4˚45'W.) extends NNW for 13 miles and is entered between Burrow Head and Mull of Galloway. There are depths in the entrance of 18 to 27m which decrease gradually towards the head where drying sands extend up to 0.5 mile seaward. There are no good harbors within the bay, but there are a number of places where small vessels can find shelter from offshore winds.

The Scares are a group of rocks lying in the middle of the entrance to the bay. They consist of Big Scare, a steep-to rock 21m high, and Little Scares, a group of above and below-water rocks, lying about 0.7 mile NNE. A dangerous wreck lies about 2.5 miles E of Big Scare.

East Tarbet Bay, lying on the N side of the promontory forming the Mull of Galloway, offers the most secure and sheltered anchorage within Luce Bay. A storehouse and a landing place, used to supply the light tower, lie at the head of this small bay. The best anchorage may be found in depths of 6 to 7m about 0.2 mile ENE of the storehouse.

In a position about 5 miles S of the Mull of Galloway, the tidal current at springs has a maximum velocity of 3.2 knots. The current runs E from 5 hours before until HW at Dover. It runs W from 1 hour after until 6 hours after HW at Dover. A tidal race, with overfalls, extends up to 2 miles off the Mull of Galloway. The current here runs at rates of up to 6 knots at springs and 4 knots at neaps. Overfalls in this vicinity are dangerous to small vessels.

Photograph Couresty of Jürgen Tronicke

Mull of Galloway

Caution.—Gunnery and bombing practice exercises take place within Luce Bay. Numerous buoys and targets are moored in the bay and may best be seen on the chart.

Mull of Galloway (54˚38'N., 4˚51'W.), 83m high, is a bold and precipitous headland that is steep-to. Due to the tidal race, it is recommended that vessels keep at least 3 miles offshore. A main light is shown from a conspicuous tower, 26m high, standing near the SE extremity of the headland.

Caution is necessary when navigating in this vicinity because the light is frequently obscured by haze or low-lying clouds.

Directions.—From a position lying about 8 miles SE of the E extremity of **King William Banks** (54˚27'N., 4˚08'W.), an outer route leads 44 miles to a position SW of the Mull of Galloway. It passes WSW of **St. Bees Head** (54˚31'N., 3˚38'W.), NNE of King William Banks, and NNE of **Point of Ayre (54˚25'N., 4˚22'W.)** on which stands a prominent light tower. The route then passes SSW of Burrow Head on which stands a conspicuous tower and radio mast. It then continues SSW of the **Mull of Galloway** (54˚38'N., 4˚51'W.).

From a position 8 miles SE of the E extremity of King William Banks, an inner and clear weather route lies between the banks lying closer inshore to the Isle of Man. This route leads about 42 miles WNW to a position SW of the Mull of Galloway. It passes SSW of the lighted buoy marking the E extremity of King William Banks; NNE of Bahama Bank, which extends 7 miles SE from Whitestone Bank and is marked at its SE end by a lighted buoy; SSW of Ballacash Bank, and NNE of Whitestone Bank, which is marked by a lighted buoy and over which the sea breaks.

From a position lying S of South Workington lighted buoy (54˚37'N., 3˚38'W.), an offshore route leads about 45 miles W to a position SW of the Mull of Galloway. This route passes S of **Abbey Head** (54˚46'N., 3˚58'W.); S of **Little Ross** (54˚46'N., 4˚05'W.) with a prominent light structure; N of **Point of Ayre** (54˚25'N., 4˚22'W.), the N extremity of the Isle of Man; S of **Burrow Head** (54˚41'N., 4˚24'W.); and S of **Big Scare** (54˚40'N., 4˚42'W.).

Caution.—An unmarked dangerous wreck lies 1 mile N of Point of Ayre; Strunakill Bank, with depths of less than 10m and over which the sea breaks, lies 1 mile NW of Point of Ayre.

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